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ABSTRACT

This study analyzes the interaction patterns and behavioral characteristics of mentally ill and well mothers and their young children. The children were between 1 and 4 years of age. The group of mentally ill mothers was comprised of 18 schizophrenic and psychotically depressed women each with a history of at least one psychiatric hospitalization. The well mothers were matched with two experimental groups (one receiving treatment in the home and the other receiving treatment in a special clinic program) on six variables: age and sex of youngest child, mothers age and marital status, race and socioeconomic status. The data were obtained--prior to intervention--from behavioral analyses of 72 five-minute videotaped sequences of feeding and unstructured play of each mother-child pair. Significant differences between the well and mentally ill mothers were found in only six of the 25 feeding categories and six of the 25 unstructured play categories. Only two of these 12 variables were significant in both feeding and unstructured play: consistency of maternal behavior over 5 minute segment, and amount of contact (touching, holding, gazing). The most significant difference between groups was found on the dyadic variable of reciprocity during feeding. The dyadic interaction of the mentally ill mothers and their children was characterized by fewer attempts by the mother to understand the child or to respond to the child's cues. (Author/SS)

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Interactional patterns of schizophrenic, depressed and well mothers and their young children*

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Prior research has indicated that the children of mentally ill mothers are at "high risk" for the subsequent development of social, emotional and intellectual impairment (Anthony, 1974, Garmezy, 1974). While vulnerability to psychiatric and psychological risk is a function of the ongoing interaction of complex genetic and environmental factors, this study was directed specifically towards an analysis of the mother-child interactional patterns and behavioral characteristics of mentally ill and well mothers and their young children. Analyses focused upon differential behavioral patterns and characteristics of the mother, the child, and the interactional system in these two groups. The group of mentally ill mothers was comprised of schizophrenic and psychotically depressed women with a history of at least one psychiatric hospitalization. All the children in the study were between one and four years of age.

Subjects

The mothers and children in this study are currently participants in a larger NIMH funded clinical research project on "The Rehabilitation of Mentally Ill Mothers" (Dincin & Cohler, 1975). Mothers and children attend an intensive clinical intervention program on a daily basis for a period of 12-15 months. This program includes group and individual therapy sessions, a diactic child development course, and social and vocational programs for the mother, as well as a therapeutic nursery for her child. This program was structured both to provide therapeutic intervention for these high risk families, and to afford

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The clinical and developmental research teams the opportunity to conduct ongoing assessments of the mother, the child and the mother-child relationship. This group will be compared to a comparison group of mothers and children receiving treatment in the home as well as with a third group of women who have never experienced a psychiatric illness, and their young children. Eight schizophrenic, ten affective or schizo-affective disordered and eighteen well mothers and their 1-4 year old children comprise the sample from which the data is drawn. The well mothers, recruited from the community, have been matched with the experimental groups on six variables: age and sex of youngest child, mothers age, and marital status, race and SFS (mother's education and father's occupation).

Procedure

Table 1 describes the entire research design and the measures utilized in this study. The data to be presented today have been drawn solely from the behavioral analyses of 2, 5 minute video-taped sequences of feeding and unstructured play of each mother-child pair. Video-taping of mother-child interaction is done at: 1) pretest (within 2 weeks of entrance into program), 2) post test (when child is discharged from the program) and 3) follow-up (approximately one year after post test data). The rating scale, coding system and data analyses to be presented have been drawn from the pre-test tapings, before intervention. We will now discuss the:

Background and Development of a scale for Rating Disturbed Mother-Child Interaction

Spitz (1965) has suggested that the abilities of the human being to establish social relations are acquired early in the mother-child relationship and Rutter (1974) has commented that behavior disorders or emotional disturbances may be the result of an early distorted relationship with the mother. If this relationship is disturbed, the child will lack the adaptive

abilities necessary to effectively interact with his environment. In dealing with ones environment a sense of affectance or competence is an outgrowth of the ongoing experience of interacting with an empathic, consistent and responsive caregiver who helps the child to understand and to structure his world. We have found that although mentally ill mothers are often able to carry out routine caregiving functions, these are provided in an unempathic and inconsistent manner. The ability of these women to function as mothers is influenced by their attitudes towards their child's needs, their ideas of what cons itutes proper caregiving, the nature of their psychopathology and level of their cognitive functioning. In addition, as Bromwich (1976) has noted, if a mother is under pressure of urgent and unsatisfied needs of her own, she will tend to behave inconsistently, being powerfully influenced by her fluctuating moods or needs. Sameroff (1975) has found that the mother who is functioning at a lower cognitive level due to genetic endowment, environmental deprivation or psychotic delusions is not able to perceive her child as a separate individual and to respond appropriately. It is quite common for the mothers in our study to misinterpret their child's behavior, attributing to it motives or meanings based upon projections of their own internal states. The above factors interact with the child's own constitutional vulnerabilities and strengths, his temperament and personality style, and changes brought about by growth and development, to determine the quality or nature of the relationship. In addition to this, we have found that mentally ill mothers are frequently not aware of, or flexible enough to deal with their child's changing developmental states and emerging abilities. As a result, they tend to limit or distort their child's interaction with the environment which in turn may result in delayed and/or deviant language, attentional skills, thought, and social behavior. Although striking differences in overall DQ/IQ are not evident

in Table 2, this is chiefly a function of the heterogeneity of the sample. Delay and/or deviance in certain areas of development is evidenced by the scatter found in the developmental and intelligence testing of almost all of the children of mentally ill mothers in our study.

In developing our rating scale, we first drew upon the broad range of maternal-child variables found to be of importance by previous investigators such as Clarke-Stewart, Bromwich, Lewis and Bruner. We believed however that these variables alone were not sufficient to capture either the abberant behaviors or more importantly the subtle differences we continue to observe in this population of mentally ill mothers. Table 3 lists the behaviors of the mother, the child and the dyad which we chose to observe in an attempt to clarify which aspects of the relationship might differ between the two groups of mothers. Although it might be expected that mentally ill mothers would differ from well mothers in terms of overtly negative, hostile or disturbed behavior, we have found that it is rather the more subtle behaviors, and lack of affect that differentiates these two groups. For example, the empathic responsiveness or "mirroring" thought by Kohut and Mahler to be critical to the development of a sense of self, is strikingly absent in this population. In addition, the "Joie de Vivre," playful enthusiasm, and connectedness one sees in mothers and children around the world is observed in these mothers interactions with their children infrequently, and inconsistently, if at all.

The findings to be presented today are based on blind ratings of 72 five minute video-taped segments; 36 of interactions during feeding and 36 of interactions during unstructured play. An inter-rater agreement of 88% was established between two blind observers on 24 video-segments.

Results and Discussion

Table 3 indicates that significance or trends were noted in 6 of the 25 feeding categories, and 6 of the 25 unstructured play categories. This finding is similar to that of other high risk studies (Baldwin, Gallant & Gamer) where there were few significant differences found between mentally ill and well mothers using somewhat different instruments.

These findings may be attributable to the present state of the art in terms of measuring intra-psychic phenomena; Kohut in his critique of Mahler's observations of Mothers and Children, comments that because the observer is forced to stand equidistant from each member of the dyad, it is not possible to measure the most critical aspect of the interaction, that is, the child's experience of the mother. In addition, psychologists have been long wedded to the method of investigating group differences in individual styles of interaction, when indeed experience should have shown us that when one has heterogenous groups, factors such as culture, ethnicity, SES and education can effectively wipe out even strong differences in individual styles of interaction.

Finally, the utilization of the X^2 analysis for this preliminary data may have obscured some meaningful differences. For example, although no significant differences were found on the variable Expressed Positive Emotion During Feeding, 50% of the mentally ill mothers expressed no positive emotion, while this was true of only 16.7% of the well mothers. Also 22.3% of the mentally ill mothers displayed inappropriate behavior during unstructured play whereas none of the well mothers did so. These and other similar findings point to the need for a finer grained analysis of the data, as will be discussed later.

The differences found between groups of mentally ill and well mothers and their children were not consistent across situations. It seems apparent that

Feeding and Unstructured Play tap very different issues and capabilities in these mothers. Feeding, or eating with one's young child, a situation usually characterized by a sharing, giving, social interaction is difficult for these women who have been given so little themselves, whereas the unstructured play situation, requires that a mother feel comfortable in her role as an adult caretaker in dialogue with her child. She must be able to step in and assist her child at sometimes, and at others, to step back and allow the child to explore and create. The mentally ill mothers were found to either under or over structure this free play situation.

Of the 12 variables found to be significant or to approach significance, it is striking that only two variables, Consistency of Maternal Behavior over 5 minute segment and Amount of Contact (touch, hold, gaze) were found in both Feeding and Unstructured Play. Mentally ill mothers were significantly less consistent in their behavior towards their children during even this brief period of time. They also touched, held and gazed at their children far less than did the well mothers. Inconsistency may be more detrimental to the child than either intrusiveness or rejection on the mother's part. It may exacerbate the unpredictability already present in the environment and prevent the child from being able to experience himself as a competent and effective individual since he merely reacts in order to survive. Beyond competence, the basic sense of security so essential for ego development or a sense of self is developed within the primary object relationship. Winnicott (1965) noted that without "good enough mothering" the child becomes a collection of reactions to impingement. If the mother's ego support is absent, weak or patchy, the child seems to lack this sense of self. This indeed is a phenomenon found in many of the children we have studied.

The other variables in which significant differences or trends were found include; on the Feeding Segments; Mothers' involvement with the child, or connectedness; mother reads child's cues and responds empathically, appropriately and sensitively, and social initiative, or the number of times the mother initiated social contact. The most significant difference between groups was found on the dyadic variable of reciprocity during feeding, that is, amount of dialogue, and bouts of interaction characterized by contingent responsiveness and engagement on the part of both mother and child. This finding is consistent with previous research on attitudes of mentally ill and well mothers towards child care. Cohler found that mentally ill mothers did not view their infants and young children as capable of communicating and seeking social interaction with them. It is not surprising therefore, that the dyadic interaction of our mentally ill mothers and their children is characterized by fewer attempts to understand the child or to respond to his cues. This may have the effect of discouraging reciprocity. The variables found to be significant or approaching significance in the Unstructured Play Serments were: Mother structures the environment (takes the role of an adult caretaker); amount of verbalization; child's expression of negative emotion; and child's communicative competence. Although these findings confirm that which even a non-trained observer would notice when watching the interactions of these mothers and children, even greater differences might have been observed had the raters been trained clinicians. We chose to use developmental rather than clinical psychologists in order to assure more objective ratings of the interactions for the development and refinement of this instrument. Indeed when our clinical staff has observed the control mothers in our sample, they have been acutely aware of the enthusiasm, empathic responsiveness and involvement of these mothers with their children. It is

provocative to find that the children of mentally ill mothers displayed a greater degree of negative emotion and were less able to elicit responses from their mothers, as measured by the communicative competence variable. Perhaps because the mother is unable to respond to her child as a separate individual or to structure the environment as an adult caregiver who is flexible, yet can set limits when necessary, the young child behaves negatively in order to draw her into his orbit. This may be especially true of the depressed mothers in our sample who appear to be more self absorbed.

We are presently attempting, with a larger sample, to differentiate the effect of being raised by a psychotically depressed as opposed to a schizophrenic mother. Within the populations of children of psychotic mothers differences have been found in certain aspects of functioning. Cohler (1977) found children of depressed mothers to have lower IQ scores as measured by the WPPSI, and to score lower on attentional measures than did the children of schizophrenic mothers. Further analysis should provide us with a clearer understanding of differences that may exist in the nature of the mother-child relationship between these two groups.

We are currently refining the scale itself as well as analyzing the data in a manner that may capture the more subtle differences we believe to exist. For this purpose, we are utilizing cluster analyses of maternal, child and dyadic variables as well as comparing profiles of individual matched mother-child pairs. These profiles will include interactional data, developmental data, maternal personality ratings, attitudes and I.Q.; risk factors including number of separations and/or hospitalizations, pre and peri-natal factors and protective factors within the child and family.

Finally, we will be following these children over time. Murphy, Beckwith and Sameroff have all commented on the child's ability to survive

early stress provided the caregiving environment is one that does not foster rigidity and maladaptive modes of coping.

We have found, as have other high risk researchers (e.g., Garmezy, Anthony, Cohler et al) that certain children appear to be relatively resilient if not invulnerable to the realities of being raised by a mentally ill mother. We will be continuing to study the 36 children described in this preliminary report as well as an additional 60 mother-child pairs in order to better understand that which is healing and that which is lethal.

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Table 1

Research Design of 5 year NIMH Clinical Research Project
"Mentally Ill and Well Mothers and their Young Children"

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Cohler, B.; & Dincin, J.

	Mother Group N = 96						
	Mentally Ill Groups				Well Group		
	Thresholds (Experimental)		Home Visiting (Comparison)		Well (Control Group)		
Time Period	Boys N=16	Girls N=16	Boys N=16	Girls N=16	Boys N =32	Girls N=32	
Admission (pretest)							
Discharge + 1 year (post test)							
Follow-up + 2 years (Follow-up testing)							

Table 1 Cont'd

Measures used in the Evaluation of Mothers and Children

At pre, Post and Follow-up Points

Mother

I.Q. - Shipley-Hartford
Interpersonal Apperception Test
Embedded Figures Test
Maternal Attitude Scale
SSIAM
Life Event Stress
Mother Interview/Grandmother Interview
Schizophrenic + Depression Indices
Chronicity of Adjustment/# of separations

Child

DQ/IQ Bayley/Binet/WPPSI
Infant and Child behavior Scales
Social Competence Scale
Early Childhood Assessment
Anthony Psychiatric Interview (when age appropriate)
Additional Assessments done at Landmark birthdays:

1 year	-	Hunt Uzgiris
		Object Permanence Test
3 year	-	Pre-School Embedded Figures Test
5 year	-	Rorschach

M/C Dyadic Interaction Measure

3 five minute video-taped segments during Feeding, Structured Play and unstructured Play.

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Table 2:

* Mentally Ill and Well Mothers and Their Young Children
Preliminary findings at mid-point of 5 year study

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Cohler, B.; & Dincin, J.

Variables	Mentally Ill	Well	Group 1 vs. Group 2 Diff.
Total Number of Mothers (N=36)	18	18	
Total Number of Children (N=36)	boys 9, girls 9 =18	boys 9, girls 9=18	
Bayley Mental Age	$\bar{X}$ = 94.2	$\bar{X}$ = 106.1	- 11.9
Bayley Motor Age	$\bar{X}$ = 96.2	$\bar{X}$ = 100	- 3.8
Binet Total I.Q.	$\bar{X}$ = 101.6	$\bar{X}$ = 111.1	- 9.47
Shipley Verbal I.Q.	$\bar{X}$ = 22.55	$\bar{X}$ = 22.44	0.11
Shipley Abstract I.Q.	$\bar{X}$ = 8.94	$\bar{X}$ = 11.44	- 2.50
Shipley WAIS I.Q.	$\bar{X}$ = 84.44	$\bar{X}$ = 86.38	- 1.94
Mother's Education	$\bar{X}$ = 4 (H.S. grad.)	$\bar{X}$ = 4 (H.S. grad.)	
Husband's Occupation	$\bar{X}$ = 4 (1) (White Collar)	$\bar{X}$ = 4 (White Collar)	
Age of Mother	$\bar{X}$ = 28.55	$\bar{X}$ = 26.94	
Age of Child (in months)	$\bar{X}$ = 28.1	$\bar{X}$ = 28	
Diagnosis: Schizophrenic	8		
Depressed, Manic-Depressive, Schizo-Affective	10 = 18		
Well		18	
Race: White	7	7	
Black	10	10	
Other	1 = 18	1 = 18	

(1) Half the subjects in each group live without the husband/father and in many cases the husband/father is unemployed. This category is an average of the few employed males.

* Mother-Child pairs were matched on: age and sex of child, age of mother, SESC Mothers' Education, Father's Occupation, race and marital status.

Cont'd

Variables		Mentally Ill	Well	Group 1 vs. Group 2 Diff.
Marital Status -	Married	8	7	
	Divorced	0	1	
	Single	8	8	
	Separated	2 = 18	2 = 18	

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Table 3

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CONDITION	TYPE OF INTERACTION	χ^2	P
FEEDING:			
Mother Variables	Tone of voice	5.64	N.S.
	Amount of expressed positive emotion (Touch, smile, affection, hugs, expressed enthusiasm)	5.66	N.S.
	Amount of expressed negative emotion (apathy, scowls, anger)	1.34	N.S.
	Mother's involvement with child (connectedness)	5.00	<.08
	Mother's expressed attitude towards child	4.61	N.S.
	Mother reads child's cues and responds empathically (appropriately, sensitively)	2.79	<.27
	Contingent responsivity (includes frequency and latency of responses as appropriate for situation and based on child's behavior)	0.52	N.S.
	Appropriateness of Mother's behavior (reality oriented vs. disturbed; evidence of distorted or disordered thinking, confused thinking, affect inappropriate to situation)	3.79	N.S.
	Encouragement, praise of child, mirroring (imitation), Affection	4.33	N.S.
	Structures Environment/takes role of adult caretaker	5.49	N.S.
	Amount of contact with child (touch, hold, gaze)	4.43	<.05
	Amount of verbalization	4.06	N.S.
	Consistency of Maternal behavior over 5 min. segment	3.20	<.08
	Social initiative (Number of times mother initiates social interaction)	3.35	<.07

CONDITION	TYPE OF INTERACTION	χ^2	P
FEEDING Cont'd			
Child variables	Amount of expressed positive emotion (Touch, smile, enthusiastic, affection, giving, sharing, pride in accomplishments)	3.05	N.S.
	Amount of expressed Negative Emotion (crying, whining, throwing, obstinacy; hitting, scowling)	4.79	N.S.
	Child's activity level	3.39	N.S.
	Readability	0.64	N.S.
	Communicative Competence - (Use of gesture or language to make wants known)	0.26	N.S.
	Attentional Abilities (situation relevant)	3.04	N.S.
	Responsivity of Child to Mother	0.44	N.S.
	Compliance/Non Compliance	2.00	N.S.
Dyadic Variables	Joint Attention/Activity	2.27	N.S.
	Affective Quality of Interaction	2.53	N.S.
	Reciprocity (dialogue; bouts of interaction) characterized by contingent responsivity and engagement on the part of both Mother & Child	4.05	$<.05$
UNSTRUCTURED PLAY			
Mother variables	Tone of voice	4.64	N.S.
	Positive Emotion	2.31	N.S.
	Negative Emotion	1.70	N.S.
	Involvement	5.66	N.S.
	Attitude	5.06	N.S.
	Reads cues	1.11	N.S.
	Responsivity	N.C.*	N.S.
	Appropriateness of Behavior	4.88	N.S.
	Gives Praise	5.31	N.S.
	Structures Environment	4.89	$<.10$
	Contact with Child	4.86	$<.08$
	Talks to Child	4.50	$<.09$

*Not computable

CONDITION	TYPE OF INTERACTION	χ^2	P
UNSTRUCTURED PLAY			
Mother Variables cont'd:	Maternal Consistency over 5 minutes	6.41	<.01
	Social Initiative	1.15	N.S.
Child Variables	Positive Emotion	1.14	N.S.
	Negative Emotion	5.27	<.07
	Activity Level	3.04	N.S.
	Readability	1.53	N.S.
	Communicative Competence	2.86	<.09
	Attention	2.58	N.S.
	Responds to Mother	2.96	N.S.
	Compliance	0.13	N.S.
Dyad Variables	Joint Attention	1.04	N.S.
	Affective Quality of Interaction	2.99	N.S.
	Reciprocity	1.39	N.S.

* Based on Rating Scales of Mother-Child Interaction developed by senior authors Musick and Clark.

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